Zahlentheoretisches Kolloquium

Freitag, 15. 9. 2017, 14:15 Uhr

Seminarraum Analysis-Zahlentheorie (NT02008), Kopernikusgasse 24/II

Improving Burgess via Polya-Vinogradov

Dr. Leo Goldmakher

(Williams College)

For a typical character (mod p), a classical result of Polya and Vinogradov implies cancellation for character sums longer than $p^{1/2}$. Burgess' bound allows us to go further, implying cancellation for character sums longer than $p^{1/4}$. But in practice, one often needs to bound shorter character sums, and no such bounds are known for a general character. I will describe recent work (joint with Elijah Fromm) in which we show that even a mild improvement of the Polya-Vinogradov inequality would imply cancellation in character sums as short as $p^{0.00001}$, thus significantly improving the Burgess bound.

K. Lapkova